

# THE TECH

VOL. XXXII. NO. 31

BOSTON, MASS., TUESDAY, NOVEMBER 5, 1912

PRICE TWO CENTS.

## SECOND CONVOCATION TO BE HELD WEDNESDAY

Sir William Ramsay to Speak  
On Chemical Problems of  
Interest.

President MacLaurin announces the second Convocation of the year in Huntington Hall, which will take place on next Wednesday afternoon, at 2 P. M. Classes will be suspended until 2.30. Sir William Ramsay, the distinguished English chemist, will speak on one of the chemical problems to which he has devoted so much of his life. The President desires a large attendance. Just previous to this lecture the professors of the Institute will entertain Sir William at a little lunch.

On Friday, October 18, 1912, Sir William Ramsay received an honorary degree of Doctor of Laws at the John Hopkins University at Baltimore. The President of the University, Ira Remson, is well acquainted with Sir William, for he was an assistant in the laboratory of the University of Tubington when the latter entered as a student. Not long ago he received one of the Nobel medals awarded for great discoveries in chemistry.

## CAPTAINS ELECTED.

Sophs Chose Werlich—Freshmen  
Elect Sully for Tug-of-War.

Yesterday afternoon both tug-of-war teams elected captains to lead them through Field Day. The Sophomores chose P. McG. Werlich for the second time. This year the vote was nearly unanimous. The Freshmen elected K. M. Sully for a leader.

The teams will be chosen after the practice today. Coach Carlson of the Sophomores and Coach Affel of the Freshmen both say that it is of the utmost importance that every candidate be present at today's practice, as no man will be chosen who is not out for the drill this afternoon.

On Wednesday afternoon a photographer from THE TECH will be present to take pictures of the entire teams at 4.30 o'clock.

## FRESHMAN GYM CLASSES.

Will Begin on Monday, Nov. 11.—  
Orders Taken for Gym Suits.

Practice in the regular Gym classes will begin Monday, November 11. Everyone who is scheduled for that afternoon must be on hand. The marks in this course will be based largely on attendance, and Physical Director Kanaly wishes it fully understood that no cuts will be allowed.

No regulation uniform will be required, but all must appear in Gym suits at the first exercise. There will be no excuse for not being supplied, because there will be agents from sporting goods houses at the Gym from 1.30 to 4.00 P. M. on Wednesday. It will be to the advantage of the men to see these men, for they will give a reduction on the regular prices.

## SIR WILLIAM RAMSAY EXHIBITS RARE GASES

Lowell Lecturer Talks About  
Properties of Neon, Krypton  
and Xenon.

Sir William Ramsay gave the next to the last of the Lowell lectures on "The Discovery of the Gases of the Atmosphere" last night to a very large audience. He first reviewed briefly what he has said at the last lecture about argon and the search for new gases of the same family. This search was finally successful only when Sir William Ramsay and Dr. Travers were given some liquid air.

He described the three types of machines which produce liquid air commercially at the present time. Two of these machines, one English and one German, make use of the Joule-Thompson effect, while the other depends on the conversion of heat energy into mechanical energy. When air is so highly compressed that its properties approach that of liquid air, it cannot liquify if it is above the critical temperature for air, but there is a considerable attraction between the molecules. When this compressed air is deprived of the heat of compression, and allowed to expand, the gas has to overcome the attractive force which has been acting between the molecules, and it obtains the necessary energy from its own store of heat, that is, it cools itself. This is called the Joule-Thompson effect. The other and more recent invention, which at present holds the palm for the most economic production of liquid air, utilizes the energy stored up in compressed air to run an engine, and the gas loses an amount of heat equal to the work that it does. In all these machines the gas after expansion cools the incoming gas, and gradually the system loses enough heat to allow part of the highly compressed air to liquify.

He mentioned the interesting fact that it was only until the discovery of the applicability of gasoline as a lubricant at very low temperatures that the most economic production of liquid air was attained. He also showed how hydrogen is liquified. In this case the Joule-Thompson effect is utilized, but only after the hydrogen has been cooled to the temperature of liquid air boiling under reduced pressure. Hydrogen in turn is used to chill helium before the latter is liquified. He said that liquid hydrogen must be separated from the air by cot-

(Continued to Page 2, Col. 2.)

## COURSE IV SOC. MEETS.

G. H. Robb Elected Vice-President—New Members Proposed.

At a meeting of the Architectural Society yesterday afternoon, G. H. Robb, 1913, was elected to the office of Vice-President. At the same time, W. F. Herbert, 1913, was elected to the Executive Committee of the organization.

There was also submitted to the club the names of the Sophomores in the Architectural Course who are eligible to become members. These names will be acted upon at the next meeting, to take place at an early date.

## KANALY PICKS RELAY TEAMS FOR FIELD DAY

More Trials Today to Decide  
Twelfth Man and the  
Substitutes.

Coach Kanaly picked the following men for the Sophomore relay team yesterday afternoon at the postponed trials held at the Field: E. E. Alt, D. B. Baker, T. J. Barry, A. B. Curtis, J. Homan, E. J. Kingsbury, G. C. Lawrence, B. Lapp, H. B. Smith, H. C. Thomas, E. A. Teeson. On account of a tie between several of the runners another trial will be held this afternoon at 4 o'clock. The last man of the team and the two substitutes will be chosen from the following runners making the fastest times: Clark, McBride, Place, Spencer, Goodell, Urquhart.

Ten men were chosen for the Freshman squad at the same time. These men were: Adams, Burton, Calahan, Comiskey, Hine, Lieber, Loomis, Klienert, Reed and Tapley. Several of the runners tied again, and Page, Dean, Goldstein, Hayes, Wallis and Gaething will try again, and the eleventh and twelfth places and the substitutes will be filled from them. Adams' position is also indefinite because Coach Kanaly may withhold him on account of his physical condition.

## STREAMS RUN TWO WAYS.

Flat Land in Minnesota Causes  
This Seeming Impossibility.

In the northern part of Minnesota there is a great area of land so flat that its waters sometimes flow into Hudson Bay and sometimes into the Gulf of Mexico. This area contains the headwaters of the Mississippi River. There are times when certain takes discharge at both ends, the northern outlet taking the flow through Red River or Rainy River into Lake Winnipeg, and thence into Hudson Bay; while the southern outlet leads to the Mississippi. Therefore the dividing line between the Mississippi drainage basin and that of Hudson Bay is indefinite and in many places cannot be determined, and the consideration of these two basins in connection with their water supplies and the uses that can be made thereof must logically be taken up together.

## TICKET SPECULATORS.

Harvard men are waging a war against ticket speculators and agencies which buy up the supply of best tickets to the Boston Theatres on football nights and sell them at prices far in advance of the regular box office figures.

Saturday night, when hundreds of college men attended the theatres, they were obliged to pay \$3.00 for the best seats in the orchestra at nearly all of the theatres. In some instances higher prices were demanded by sidewalk speculators. The greatest raise in prices comes on the night of the Dartmouth and Yale games.

## MR. C. P. GOW TO SPEAK TO CIVIL ENGINEERS

Talk on Tunnel Construction  
Promises to Be One of  
Extreme Interest.

The Civil Engineering Society will have an interesting and instructive talk tomorrow evening in the Union at 8.15. Mr. C. P. Gow of this city will speak on tunnel construction, and will devote part of his time to the East Boston Tunnel.

Accompanying his talk he will show an interesting collection of lantern slides which he has made during his wide experience in engineering. He will also show some of the Boston Transit Commission's slides. He gave this talk not long ago before the Tuft's Engineering Society, where it was received with much enthusiasm, and it will be as well received here.

## CATHOLIC CLUB DINNER.

Talk on Socialism to Be Feature  
of Meeting Wednesday.

The Catholic Club will hold a dinner in the Union Wednesday, at 6 o'clock. The officers have secured John C. Johnson, a prominent lawyer of this city, to speak to them on "Socialism." The preliminary arrangements for the annual dance of the Catholic Club will probably be started tomorrow night by appointing several important committees.

Tickets for this meeting are already out. It is expected that the meeting will be over in time to let those men who are interested in the Civil Engineering Society to attend the meeting that the latter will hold in the Union at 8.15 o'clock.

## TO ASSIST AT POLLS.

Six ardent Bull Moose supporters left for Beverly last night at 8.30 P. M., to work at the polls in that district. They are to give out stickers to voters with the name of a candidate who, on account of an error, did not get his name on the regular ballots.

Technology men will also assist at polls in the various precincts of the city. The checking of names will in most cases be done by them. Many of these men were busy last night speaking at rallies about the city.

## WEATHER.

Forecast for Boston and vicinity: Fair and warmer today; light to moderate south to southwest winds.

## K CALENDAR.

Tuesday, November 5, 1912.  
Election Day.  
4.00—Field Day Tickets—Union.  
4.00—Freshman and Sophomore Relay Team Time Trials—Field.  
4.00—Tug-of-War Teams—Gym.  
4.00—Banjo Club Trials—Union.  
Wednesday, November 6, 1912.  
2.00—Convocation—Huntington Hall.  
4.00—Tech Show Book Due.  
6.00—Catholic Club—Union.  
8.15—Civil Engineering Society Meeting—Union.

**FIELD DAY TICKETS ON SALE IN UNION 1-2 P. M.**

# THE TECH

**MANAGING BOARD.**  
 A. T. Gibson, 1913.....General Manager  
 S. H. Taylor, 1914.....Editor-in-Chief  
 A. H. Waitt, 1914.....Managing Editor  
 B. E. Adams, 1915.....Business Manager

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 M. Parla, 1914.....Institute Editor  
 P. J. Munu, 1915.....Institute Editor  
 H. Rogers, 1915.....Societies Editor

**NEWS STAFF.**  
 S. Berkowitz, 1915.....L. Lamb, 1914  
 Entered as second-class matter, Sept. 15,  
 1911; at the postoffice at Boston, Mass., un-  
 der the act of Congress of March 3, 1879.

**BUSINESS BOARD.**  
 L. C. Lamb, 1914.....Adv. Manager  
**NEWS BOARD**  
 F. C. Foote.....Asst. Managing Editor

Office, 42 Trinity Place.  
 Phone—Back Bay 5527 or 2180.  
 Night Phone—Back Bay 5527.

Published daily, except Sunday, during  
 the college year by students of the Massa-  
 chusetts Institute of Technology.

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 Single copies, 2 cents.  
 Subscriptions within the Boston Postal  
 District and outside of the United States  
 must be accompanied by postage at the

TUESDAY, NOVEMBER 5, 1912

## BULLETIN BOARDS.

The bulletin boards have again be-  
 come the eyesores of Technology with  
 all their sundry collection of data,  
 most of which is fit for the files of  
 a society for the collection of antiqui-  
 ties. Under present conditions the  
 boards may as well be abolished alto-  
 gether when we consider the exceed-  
 ingly poor way in which they are  
 cared for and the extreme neglect  
 which is shown by the officers of the  
 several different activities whose duty  
 it is to post notices.

Among several other instances of  
 neglect which are evident at this time,  
 more especially on the Union bulletin,  
 which is probably the most widely  
 read, are the facts that the 1914 bal-  
 lot results have not yet been posted,  
 that there are several Institute no-  
 tices of more or less importance  
 which have not been placed on the  
 proper sized cardboards—they are,  
 therefore, not in accordance with the  
 ruling of the Institute Committee, and  
 at the same time being torn and in  
 many cases lost. Many notices are  
 several days old as well.

It is high time the Institute Com-  
 mittee assumed a strong hand in this  
 matter and made sure that their  
 rulings are carried out.

Many schools in Germany and  
 Switzerland offer courses of instruc-  
 tion in the art of waiting on table.  
 The Lausane High School goes still  
 further in this direction, and under-  
 takes to teach the complete science  
 of hotel-keeping. This includes thor-  
 ough proficiency in four languages,  
 geography, training in deportment,  
 the study of hygiene and knowledge  
 of gymnastics, calisthenics and dancing.

A number of chemists from the In-  
 stitute and Worcester Tech went to  
 Amherst last Saturday and Sunday to  
 see the laboratory and see what Pro-  
 fessor Hopkins is doing there. They  
 had a banquet at the "Pheasant" on  
 Amity street Saturday night, and were  
 entertained Sunday by Professor  
 Chamberlain. This gathering of  
 chemists takes place twice a year,  
 when the meet informally at one col-  
 lege or another to see and discuss  
 each other's work and so keep abreast  
 of the times.

The University of California in its  
 total enrollment is now the second in-  
 stitution of its kind in the United  
 States, having 7,263 students. This  
 number is only exceeded by Columbia.

Union College is to have one of the  
 finest gymnasiums in the country  
 when its \$100,000 building is com-  
 pleted next fall.

**REV. E. H. VAN ETEN  
 TO ADDRESS T. C. A.**

New Curate at Trinity Church  
 Will Have as Topic "The  
 Second Mile."

The speaker at this week's T. C. A.  
 meeting Thursday, at 1.30, in the  
 Union, is a man well known to a great  
 many Technology men, Rev. E. H.  
 VanEtten, curate of Trinity Church.  
 His topic is: "The Second Mile." Mr.  
 VanEtten is a young man, a recent  
 graduate of Amherst College, and  
 came to Trinity only last year. Yet  
 during his short time at the church  
 he has become very popular with the  
 young men, especially those Tech-  
 nology men who are in the Brother-  
 hood of St. Andrew, with which he is  
 closely connected and for which he  
 has done a great deal of work.

His interest in the students of the  
 city, shown by his hospitality at Trin-  
 ity House and in other ways, is ap-  
 preciated by Technology men, and it  
 is expected that a large crowd will be  
 at the meeting. Mr. VanEtten has  
 won an enviable reputation as a  
 speaker and preacher, and an interest-  
 ing and inspiring talk is looked for.

## COMMUNICATION.

To the Editor of THE TECH:

From the opening of the term,  
 about twenty-five or thirty men have  
 asked me if I would not give a course  
 in Knots, etc. A week ago I an-  
 nounced in THE TECH that I would  
 give such a course if any number of  
 men in the second, third and fourth  
 year classes desired it, and in order  
 that I might know at what time to  
 give the instruction, so that it would  
 suit the greatest number of those de-  
 siring the work requested, all such to  
 notify me of their available time.  
 Since this notice appeared a number  
 of men have spoken to me of the  
 course and they desire to take it, but  
 to date have had just one application  
 submitted. If even a small number  
 desire this course, and it is possible  
 to have a section at any time when  
 they can attend, I shall be glad to  
 arrange it; but it is manifestly impos-  
 sible to select such time unless I can  
 have the applications submitted. If  
 you want a course, put in the applica-  
 tions at Rogers Hall Postoffice  
 promptly so that we can either get  
 started or drop the matter for this  
 year.

(Signed) MAJOR COLE.

## SIR RAMSAY'S LECTURE.

(Continued from Page 1, Col. 1.)  
 ton wool, as otherwise the air in con-  
 tact with the hydrogen will solidify  
 gradually and sink as a white precipi-  
 tate to the bottom of the hydrogen  
 bulb.

The liquid air that Sir William  
 Ramsay first obtained left on partial  
 evaporation a residue of gas. This  
 was freed from oxygen and nitrogen,  
 and the spectrum which the residue  
 showed had some new lines in it, and  
 had a density of 22.5 greater than that  
 of argon. By the same sort of reason-  
 ing that was used in the case of argon  
 it was decided that there was present  
 in the argon some gas still heavier  
 than the latter. How to separate this  
 gas was the next question, and the  
 method finally decided on was the  
 fractional distillation of a mixture of  
 the liquified gases. Sir William Ram-  
 say illustrated the method on the  
 lecture table. He has a gas-holder  
 which could be filled with the mixture  
 of the gases, and then these could be  
 forced under pressure into a bulb  
 which was surrounded by liquid air.  
 There the gases liquefied, and when  
 they were allowed to boil away the  
 first portions could be collected in one  
 gas-holder, the second portions in an-  
 other, until at last determinations of  
 density and the examination of the  
 spectra showed that the gases were sep-  
 pure. In this way krypton was sep-  
 pure.

(Continued to Page 3, Col. 2.)

# PINKOS

## College Tailor

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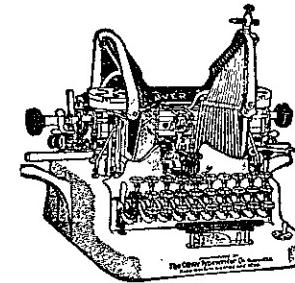
Please call to see my line of Foreign and Domestic  
 woolens which I make at \$35.00 to \$50.00. This  
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**JUNIORS VS. FRESHMEN.**

**Third Year Men Defeat 1916 in Football Yesterday.**

Yesterday afternoon the Junior Class football team played the Freshman eleven in a practice game lasting less than half an hour. Although the Juniors have had no practice, they had no difficulty in breaking through the Freshman line at will.

C. Fox, at halfback, played a star game for the third year men, scoring one of their touchdowns. The 1914 backs made big gains through the line and around the ends. The first year men were given the ball several times to see what they could do on the offense, but couldn't gain much against the Juniors. The 1916 men were unable to score, while the Juniors crossed the goal line twice.

The Juniors lined up as follows: Mackentepe, l. e.; Brown, l. t.; Hardy, l. g.; Duffield, c.; Benjamin, r. g.; Burnham, r. t.; Hines, r. e.; Mitchell, q. b.; Deckop, r. h. b.; Fox, l. h. b.; Bryant, f. b.

**SIR RAMSAY'S LECTURE.**  
(Continued from Page 2, Col. 2.)

arated from argon. Its spectrum, which Sir William Ramsay exhibited, was not very striking. But at the same time there was found a portion of the gas which was lighter than argon, and whose spectrum showed lines which belonged neither to argon nor to helium, the lightest element of the group. This gas was freed from helium by treatment with liquid hydrogen, which solidified the neon (the "new" one), leaving the helium to be pumped off. The residual neon possessed a very striking spark spectrum, for it was a brilliant flaming red. When its light is analyzed there are found to be present many red lines.

From the krypton Sir William Ramsay obtained by a series of fractionations extending over several months a heavy gas with a rather dull violet spectrum, which, however, becomes a brilliant blue if a Leyden jar is placed in the circuit. The density of this gas, xenon, is about 66 times that of hydrogen, making it almost the heaviest, if not the heaviest, of the permanent gases. Hydrogen iodide is its closest rival.

These gases possess the most varied physical properties, yet these properties are in every way in agreement with the positions that the elements occupy in the periodic table. Helium boils at the extraordinarily low temperature of 4 degrees Absolute, while the critical temperature of xenon lies above zero Centigrade.

Sir William Ramsay was given the residues left at the end of a week from the distillation of 120 tons of liquid air (which is fractionally distilled to obtain its oxygen), and he investigated this residue very carefully. He obtained from it 120 cc of pure xenon, which could not be further fractionated. They found that the proportion of xenon in air was less than that of gold in sea water. If there is any other gas present in air which is heavier than xenon they decided that it could not occur to a greater extent than one twenty-five millionth. But that there is another gas of this family Sir William intends to show at his next lecture, and at that time he will also explain why it was not found by the fractionation of liquid air.

**DON'T BE SO LAZY!**

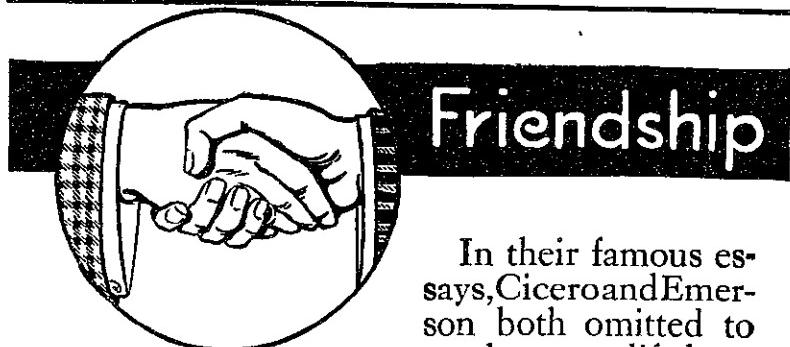
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Even. at 8.15

Wed. and Sat. Matinees at 2.15

**BROADWAY TO PARIS****TONIGHT  
ELECTION RETURNS**on all the bulletin boards  
at the newspaper office**GET A  
GOOD DINNER  
AT  
THE UNION**

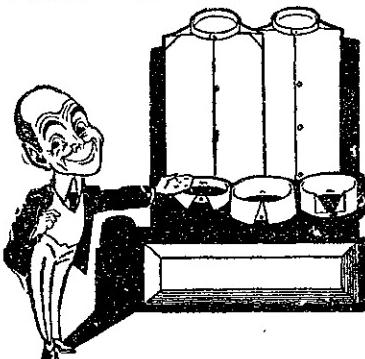
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Faculty Notices, free.  
Activities, 4c. per line;  
Individuals, 10c. per line, 6 words to a line.

**FACULTY NOTICE.****Candidates for Graduation.**

October 28, 1912.

Notes in regard to status with reference to graduation have been sent to fourth-year students. Any student who has not received a note should consult me if he expects to be a candidate for graduation in June, 1913.

A. L. MERRILL,  
Secretary of the Faculty.

**STUDENT VOLUNTEERS**—Give your names to L. R. Talbot, T. C. A. office.

**PRECISION OF MEASUREMENTS.**

The lectures in Precision of Measurements for entering College Students will be held on Mondays and Fridays at 4 P. M., in Room 23, Walker Building, during the first five weeks. (8-tf) H. M. GOODWIN.

**FACULTY NOTICE.**

Third Year—Elements of Electrical Engineering—Change of Recitation Hour.

Section F will change from Tuesday, at 10 o'clock, to Wednesday, at 9, to recite in Room 20, Engineering B. WALTER HUMPHREYS,

**FACULTY NOTICE.**

GYM CLASSES begin Monday, November 11, as noted on the Freshman tabular view. All men must be in Gym suits at the first exercise. No Cuts allowed during year.

A sporting goods representative will be at the Gym from 1:30 to 4 o'clock on Wednesday.

F. M. KANALY,  
Gym Instructor.

RECEIPTS for Seniors who paid class dues with their ballots may be obtained at the Cage. (31-5t)

**ROOM FOR RENT**—Back room for two men, large desk, steam heat, continuous hot water, two closets, three windows; \$5.00 per week. 88 St. Botolph St. (Tues-Thurs-Sat)

**PRIVATE HOME**—One large room, 2 connecting rooms, beautifully furnished, fine library; preferably professors or graduate students. Convenient to all electrics. 19 Howard Ave., Brookline.

**LOST**—At Tech Field, an open-faced gold watch with H. R. B. on back. Reward if returned to 16 Exeter street. (28-2t p)

**LOST**—A 10-inch Slide Rule, in the Union, Monday, Oct. 28, 1:30 to 2 P. M. Return to Morrill, '14, for liberal reward. (28-2t v)

**FOUND**—Slide rule and case, Pipe case, Raincoat, Text-books, Umbrella, Bunch of keys, 2 Stick pins, 2 Note Books, 3 Watch Fobs, Fountain Pen, Watch, 2 pairs of Rosary Beads, Fraternity Pin. Apply at Bursar's office. Dancing Parties every Wednesday and Saturday evenings. Lundin Gymnasium, 44 St. Botolph street, Boston. Refined patronage. (Tues-Fri)

**UNIFORMS.**

The agent for Jacob Reeds' Sons, who have the contract for making the drill uniforms for the battalion, will be at the Armory from 3 to 4 o'clock, **WEDNESDAY, NOVEMBER 6TH.**

At that time all uniforms which have been turned in to them for repair or alteration will be delivered to those who are able to make payment at that time.

At the same time they will receive any other second-hand uniforms which are in need of alterations. It will also be possible to have caps of the old pattern remodeled after the new style.

All officers, non-commissioned officers or privates not having ordered all parts of the required uniform should do so at this time as it will be their last chance. (31-2t)

**HOTEL BRUNSWICK****BOSTON**

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